

2000 Paper 1 Question 11

Operating Systems

Describe with the aid of a diagram the life-cycle of a process. You should describe each of the states that it can be in, and the reasons why it moves between these states. [4 marks]

What information does the operating system keep in the process control block? [4 marks]

What information do the shortest job first (SJF) and shortest remaining time first (SRTF) algorithms require about each job or process? How can this information be obtained? [2 marks]

Give *one* advantage and *one* disadvantage of non-preemptive scheduling. [2 marks]

What steps does the operating system take when an interrupt occurs? Consider both the programmed I/O and DMA cases, and the interaction with the CPU scheduler. [4 marks]

What problems could occur if a system experienced a very high interrupt load? What if the device(s) in question were DMA-capable? [4 marks]